Q.1) Answer the following question's. [Any-4]   [8]

i.] Find the slope of line passing through the points A (3, 1) and B (5, 3).

ii.] Find the distance of the point (-6, 8) from the origin.

iii.] If the distance between the points (4, k) and (1, 0) is 5, then what can be the possible values of k?

iv.] Write the coordinates of a point on x-axis which is equidistant from the points (-3, 4) and (2, 5).

v.] Show that points P (3, 1), Q (-1, 9) and R (4, -1) are collinear.

vi.] Find the value of K, if the points A (-1, 1), B (5, 7) and C (8, K) are collinear.

Q.2) Answer the following question's. [Any-3]   [9]

i.] Examine whether points (3, 3), (-4, -1) and (3, -5) are the vertices of an isosceles triangle.

ii.] In which quadrant the point P that divides the line segment joining the points A (2, -5) and B (5, 2) in the ratio 2 : 3 lies?

iii.] Three vertices of a parallelogram taken in order are (-1, 0), (3, 1) and (2, 2) respectively. Find the coordinates of fourth vertex.

iv.] If A (-14, 10) and B (6, -2), then find the co-ordinates of the points which divides seg AB into four equal parts.

v.] If A (2, 7), B (-6, 1) and (-5, 8) are the vertices of a triangle, then find the co-ordinates of the circumcentre of that triangle.

Q.3) Answer the following question's. [Any-2]   [8]

i.] If A (5, 2), B (2, -2) and C (-2, t) are the vertices of a right angled triangle with ∠B = 90°, then find the value of t.

ii.] If the point P(x, y) is equidistant from the points A (a + b, b – a) and B (a – b, a + b), prove that bx = ay.

iii.] If P (2, -1), Q (3, 4), R (-2, 3) and S (-3, -2) are the vertices of a quadrilat4eral. Shoe that PQRS is a rhombus.

iv.] Points A (-1, y) and B (5, 7) lie on a circle with centre 0 (2, -3y). Find the values of y. Hence find the radius of the circle.

Q.4) Answer the following question's. [Any-1]   [5]

i.] Find the values of k for which the points A (k + 1, 2k), B (3k, 2k + 3) and C (5k – 1, 5k) are collinear.

ii.] In ΔABC, D and E are the midpoints of the sides BC and AC respectively. Find the length of DE.
   Prove that DE= ½ AB.

Best of Luck.....